

wherever steep slopes with crevices occur. Hence especially noticeable in badlands and on the cliffs of the steep-sided buttes.

147. **Troglodytes aëdon parkmani.** WESTERN HOUSE WREN.—Nests abundantly in the more wooded portions of the Little Missouri Valley and in the pine forests of the high buttes.

148. **Sitta canadensis.** RED-BELLIED NUTHATCH.—A common resident in the pines of the buttes.

149. **Penthestes atricapillus septentrionalis.** LONG-TAILED CHICKADEE.—Breeds abundantly in the forests of the buttes. Common later in the woods elsewhere.

150. **Hylocichla ustulata swainsoni.** OLIVE-BACKED THRUSH.—Rare migrant.

151. **Hylocichla fuscescens salicicola.** WILLOW THRUSH.* — Not uncommon along the Little Missouri, August 27–September 3.

152. **Planesticus migratorius.** ROBIN.—Breeds tolerably commonly in the buttes and along the Little Missouri River.

153. **Sialia sialis.** BLUEBIRD.—Common breeder in the pines of the higher buttes.

154. **Sialia currucoides.** MOUNTAIN BLUEBIRD.—A brood was seen in the Short Pine Hills. Grinnell also reports seeing a brood of young there in 1874.

DOUBLE-CRESTED CORMORANTS BREEDING IN CENTRAL ILLINOIS.¹

BY FRANK SMITH.

THE Double-crested Cormorant (*Phalacrocorax auritus*) is well known in Illinois as an abundant migrant along the Illinois River bottomlands in both spring and autumn, when flocks of several hundred may sometimes be seen for periods of several weeks taking heavy toll from the fish life of the region.

The southern limit of their breeding range east of the Mississippi River seems to be not very well known. Kumlien and Hollister in 'The Birds of Wisconsin' (1903) suggest that they probably nest in certain counties in the northern part of that State and cite

¹ Contributions from the Zoölogical Laboratory, University of Illinois, under the direction of Henry B. Ward, No. 6.

Carr (1890) as authority for the statement that they breed about some of the larger isolated lakes in the northern and central part of the State. No reference has been found by the writer to their breeding in Illinois but there is pretty good evidence that they have bred in small numbers more or less regularly for several years in the Illinois River bottomlands near Havana, the site of the Illinois Biological Station. The breeding locality is about thirty miles south of Peoria.

The writer first learned of cormorants nesting there, on June 18, 1909, when in company with a party of naturalists of the State he was shown a family of living young birds pretty well grown which with the nest had been brought to Havana from the vicinity of Clear Lake, about twelve miles up the river. We were told that there were other nests with young in the same locality. Mr. Frank C. Baker of the Chicago Academy of Science secured the specimens and took them to Chicago where the photograph which is the original of an accompanying illustration was made by Mr. F. M. Woodruff.

In July, 1910, the writer, in company with Professor Charles F. Hottes of the botanical department of the University of Illinois, visited each of the only two nesting places which we could locate. We found a total of nine nests of which two contained eggs and none had nestling birds. We learned that at least one set of eggs had been taken by a fisherman earlier in the summer.

The opening of the Chicago Drainage Canal about ten years ago has been followed by permanently higher water levels in the lower part of the Illinois River valley and many former bottomland marshes and swamps have been converted into wide stretches of open water. This has been accompanied by the death of many of the trees growing at certain levels. In both of the nesting places visited, the birds had selected dead trees which were standing in open water a few feet deep and from which the open water with scattering dead trees extended for long distances in various directions.

The first nesting place visited was at Clear Lake, about twelve miles north of Havana and in the same vicinity as that from which the young birds had been taken the preceding summer. At the time of the visit, July 2, 1910, two dead ash trees but a few rods

apart contained each two nests. Of the two nests in each tree one was empty and the other contained a set of three eggs. The eggs of neither set had been long incubated but the nests were apparently deserted and no living cormorants were seen in the immediate vicinity. A dead adult hanging from a limb of a tree near-by gave reason for the supposition that the little colony had been broken up by hunters or fishermen. About a half mile from these two trees another tree was found which contained two nests, both empty. Five adults were seen flying or swimming near-by. The six nests referred to above were from twenty-four to thirty-two feet above the water but could not well be placed higher as all the trees of the immediate vicinity were rather small.

On July 14, 1910, a visit was made to a nesting place about five miles north of Havana at the head of Dogfish Lake where two tall dead cottonwood trees were found in close proximity, one of which had one nest and the other had two nests. One of the latter was dislodged during a violent wind storm after our arrival but before the photograph was taken. The nests were at least fifty feet above the water.

Soon after the storm had passed and before we had gone very near to the nests, small flocks of cormorants from neighboring lakes began arriving and finally twenty-one of them were perched in the two nest-bearing trees before we disturbed them by our approach. None of them seemed to pay any special attention to the nests, and as we afterwards saw no signs of life therein we conjectured that young birds might already have been reared and have left the nest and were perhaps included in the flocks. We could not get near enough to determine whether or not any of them were juvenile. It was nearly a month later in the season than the time at which well grown birds had been found the preceding year.

Although this latter nesting place was much nearer to Havana than the first one, it was not in the line of regular travel, was not known to as many people, and I have no knowledge of the birds having been molested.

Inquiries among fishermen and hunters disclosed the fact that cormorants' nests have been built in the Havana region for a number of years past and while it was difficult to get very definite

information we found reason for believing that there was a somewhat close relation between the beginning of the cormorants' nesting in the region and the dying of large numbers of trees after the opening of the Chicago Drainage Canal. There is very little probability that they remained in the vicinity during the summers of 1894-98, as the writer and various other persons who were familiar with birds and who worked at the Illinois Biological Station during those seasons did not see them except during migration, while during the past two summers they were frequently seen near the Station throughout July and August. The Station was not located at Havana during the interval between the years 1900 and 1909.

The fishermen of the region know these birds as Nigger Loons and detest them because of their destructiveness to fish. They were rather reticent but there seemed good reason for inferring that the Clear Lake colony had been "shot out" and it seems hardly probable that the establishment of large breeding colonies would be permitted.



THE WARBLERS IN WAYNE COUNTY, MICHIGAN, IN 1909.

BY J. CLAIRE WOOD.

BUSINESS confined the writer mainly to River Rouge Village during the spring of 1909. In the adjacent village of Ford an orchard extended from the Detroit River westerly into Ecorse Township and terminated near a small piece of timber; all being on what is known as Private Claims 112 and 113. Here, spare afternoons were devoted to warbler observations. May 16 and 23 were spent five miles inland on P. C. 32, Ecorse Township. This woods is about one mile long and one end lies in the bottom